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(54) **RADIATION IMAGING APPARATUS AND PHANTOM USED FOR THE SAME**

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See application file for complete search history.

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(57) **ABSTRACT**

In the imaging space provided by a panoramic imaging apparatus, a phantom is arranged. The phantom is located to a predetermined tomographic plane and includes markers which image known positional information with an X-ray beam. The X-ray beam from an X-ray source is acquired as X-ray transmission data by a detector, and a panoramic image is produced using the data. Based on known positional information of the markers and information of marker positions in the panoramic image, distance information (Rs, Rd) between the X-ray tube and the detector and height information (B1) of the X-ray tube to the detector are calculated. From this calculated results and the acquired data, parameters ($\Delta x/\Delta Fi$, θ, $\Delta\theta/\Delta Fi$, D, A, CX, CY) defining positional relationships among the X-ray tube, the detector, and the tomographic plane are calculated such that amounts of changes in the position connecting the X-ray tube and the detector are considered in the parameters. This allows the parameters to be calibrated for 3D image reconstruction.

20 Claims, 37 Drawing Sheets